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AUTHOR Gordon, Christine J.
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ABSTRACT

This paper addresses the role of prior knowledge in the comprehension of narrative and expository text, two major categories of discourse. The paper reviews some of the differences in the essence of prior knowledge required to comprehend each text type and then examines research on prior knowledge and conceptual change that deals with both text types. It concludes with a discussion of current issues and directions for further research on: (1) the nature and complexity of prior knowledge as it relates to narration and exposition; (2) the interaction of text variables and prior knowledge that make narratives or expositions easy or difficult to comprehend; (3) the effects of such components of prior knowledge as different attitudes, beliefs, social affiliations, and communication conventions on comprehension of narrative and expository text; (4) the relative importance in comprehension of exposition and narration; (5) the role of prior knowledge in relation to top-down processing concerns such as schema selection, activation, maintenance, and utilization; (6) the differences in processing demands across the two genres; (7) the role of narrative and expository text in promoting conceptual change; and (8) the role of personal involvement as a component of prior knowledge in the comprehension of narrative and expository text. Contains 79 references. (RS)

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The Role of Prior Knowledge

in

Narrative and Expository Text

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C. Gordon

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by

Christine J. Gordon
Professor of Education
Education Tower 1102
University of Calgary
2500 University Drive NW
Calgary, Alberta
T2N 1N4 Canada

CS216335

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The Role of Prior Knowledge

The purpose of this article is to address the role of prior knowledge in the comprehension of narrative and expository text, two major categories of discourse. This article will review some of the differences in the essence of prior knowledge required to comprehend each text type, examine some research on prior knowledge and conceptual change that deals with both text types, and conclude with current issues and directions for further research.

Most research on prior knowledge of the topic (content schemata) and ability to process text in the period 1975-85 tended to focus on one text type or another, not both within the same study. Research on the effect of prior knowledge of structure (structure schemata) during the same period tended to focus on narrative text. When researchers turned toward expository text, again they tended to deal solely with the effect of prior knowledge of content or structure on expository comprehension without comparing it to performance on narratives. Thus researchers have tended to study expository and narrative text separately. Few researchers have studied reading processes across text types.

Wilson and Anderson (1986), after summarizing a decade of research on the role of prior knowledge in comprehension, reported that research has shown that "the knowledge that a reader brings to a text is a principle determiner of how that text will be comprehended, and what may be learned and remembered" (p. 32). The assumption that often undergirds such statements is that prior knowledge has a facilitative effect on comprehension and that adequate and appropriate knowledge is in itself sufficient for

comprehension. Pace, Marshall, Horowitz, Lipson and Lucido (1989), however, pointed out that the picture is much more complex than has been drawn in that last decade of research because prior knowledge can also inhibit comprehension. The authors elaborate that such factors as attitude and personality can affect how text is processed, different experiences can lead to different perspectives and various personal belief systems and commitments can affect the comprehension of text. They suggest that prior knowledge is not only cognitive, but it is also affective and that "concepts with which affective components are associated tend to be viewed personally and are therefore more resistant to revision" (p. 214). They remind us that Bartlett's view of schema is not limited to knowledge itself, but is "a group of operations that is used for creating knowledge" (p. 214). The role of prior knowledge thus is much more complex than initially assumed. This complexity becomes very evident when researchers, studying conceptual change, consider personal beliefs about natural phenomena that can conflict with scientific explanations of the same phenomena.

Pace et al. (1989) addressed still another aspect of prior knowledge, that of sociocultural background, which affects comprehension. Members from different cultures have different school experiences, attitudes, beliefs, religious and social affiliations and communication conventions, for example, that may lead to different understandings from texts. None of these factors have been sufficiently addressed in research on reading comprehension.

Not only is the role of prior knowledge a varied one, dependent on the genre itself and the host of other factors mentioned above, but the essence of prior knowledge itself has recently come under close scrutiny. Initially, schema theorists established that generally prior knowledge consisted both of knowledge of text content (substance of the text) and knowledge of text structure (discourse-level forms) and concentrated their research on these facets. Direct measures of prior knowledge thus included vocabulary, multiple choice items based on content, free responses, and oral and written recalls (the latter to access knowledge of structure). Gradually, however, prior knowledge has emerged as a much more multi-dimensional construct, a construct that, according to Valencia and Stallman (1989), seems "to embody the complexity of an interactive view of reading" (p. 435). Assuming that prior knowledge was a multi-faceted or a multi-dimensional construct, Valencia and Stallman (1989) conducted a study to validate multiple measures of prior knowledge which would tap the various aspects of prior knowledge.They found a number of trends for comprehension of expository text and prior knowledge that were not evident for comprehension of narrative texts. In their discussion, they conclude that the prior knowledge is a very complex concept--"one that is idiosyncratic depending on the reader and the text, and one that is comprised of different facets of knowledge" (p. 434). They provide evidence to suggest prior knowledge is different than ability, but the difference is variable as "it depends on topic, text, and probably the assessment task

itself" (p. 434). Their evidence also suggests that understanding of narratives is less dependent on prior knowledge of content than is understanding of exposition. Facets of prior knowledge such as text structure, affect, accessibility, relevancy, and analogous knowledge as suggested by other theorists and researchers have been either been studied separately or have not yet been operationalized and researched. We have no information as to whether all facets of prior knowledge are as important as is prior knowledge of content (knowledge of a topic) in the comprehension of narrative and expository text. In addition, the picture is further complicated by the observation that possessing any facet or all facets of prior knowledge does not guarantee that a reader will access it or is able to use it or, from the metacognitive standpoint, willing to use it to enhance comprehension. Both the work of Spiro (1980) and Gordon and Rennie (1986, 1987) points to the need for research in prior knowledge as it relates to processing issues (schema selection, activation and utilization, etc.). To determine what aspects of prior knowledge can interact with completeness of prior knowledge (whether it is accurate, partial, inaccurate, different) and with top-downing processing activities (instantiation, availability, maintenance, and accessability) will also require further research.

Valencia and Stallman (1989) highlight yet another issue related to findings on prior knowledge. That is, because previous research has used mainly contrived texts, the findings may not be as generalizable to "naturally" occurring narratives and

expositions. The researchers explain that the prior knowledge-comprehension link between ecologically valid texts that students normally read may not be as strong as the links between contrived, ambiguous texts used in past research. They state, "Naturally occurring texts are probably more interesting, more 'considerate', contextually richer, and less ambiguous than texts used in many earlier studies, thus making impact of prior knowledge less critical to comprehension of these texts" (p. 435). They suggest that future researchers need to investigate further what facets prior knowledge entails, state clearly what is meant by "prior knowledge" in any particular study, and explore ways in which the many components of prior knowledge function across genre, specific topics, various ability levels, and tasks to enhance comprehension.

We need now to examine briefly some of the literature on text type or genre.

The problem of classification schemes

That school children (and even adults) find expository material more difficult to comprehend than narrative text seems to be a well-accepted observation (Baker & Stein, 1978; Dixon, 1979). As an introduction to their argument that the fundamental problem in trying to interpret differences in text difficulty lay in the text classification schemes, Spiro and Taylor (1987) presented a brief exploration of why exposition might be more difficult than narrative. They put forth such explanations for this phenomenon as the possibility that children's literacy experiences begin with stories and contribute to the development of a story schema, that

children may develop more efficient processing strategies for narratives, and that stories may deal with a smaller variety of topics than do expositions. They concluded, however, that there are problems with classification systems, like Brewer's (1980) for example, because there is overlap among categories such as narration, exposition and description. Second, one text type is often embedded in another text type. For example, description can be a large part of narrative or exposition (Witte & Davis, 1982). Spiro and Taylor (1982) went on to propose a multi-dimensional text- and context-classification system in which they outlined some of the psychological dimensions on which readers and text might differ.

The differences in conceptualization of classification schemes and the overlap among discourse types are in fact sources of difficulty for researchers who wish to investigate the effect of text type on comprehension. Theorists also disagree as to the <u>significance for the reader</u> of the differences among text types. Some theorists (Bruner, 1986; Langer, 1986; Van Dijk, 1980; Meyer, 1977; Britton & Black, 1985) believe that the differences in discourse types are reflected in that text is processed differently. Each text type makes unique processing demands on the readers. Yet most researchers agree that text-related factors other than genre also determine how text is processed. Some have focused on rhetorical modes (Meyer & Freedle, 1984), predicates (Horowitz, 1987), cohesion, coherence, intertextuality (Debeaugrande, 1987), and tone (Crismore, 1981), but fewer have

focused on the multi-dimensional aspects of prior knowledge itself. Other theorists and researchers (Beach & Brown, 1987; Fish, 1980; Langer, 1986) argue that the text's overall structure (i.e., whether the text is a narrative or an exposition) bears little influence on the reader's processing. Beach and Brown (1987) maintain that similar principles of language hold for all text types and Langer (1986) (despite pointing out that text genre is salient) argues that readers and writers use common ways of reasoning regardless of text type; that there are transferrable strategies across processing modes (reading and writing) and text types (narrative and exposition). Fish (1980) maintains that the interpretative community is more influential upon the reader's activity than features of text.

Research on difficulty of narrative and expository text

Several researchers have examined comprehension/processing across text types. The findings are at best contradictory.

One early group of studies (Gordon, Monroe, Rigney & Lutz, 1978; Tierney, Bridge & Cera, 1978; Olsen, 1985) found that narrative text was easier to comprehend and to recall than expository text. Let us examine a more recent study related to difficulty of text type. Dole, Valencia, Greer and Wardrop (1991) found significant differences among fifth grade students' comprehension scores for three expository texts, but no significant differences among the comprehension scores for the three narrative texts used in the study. They speculated that in addition to students' level and use of prior knowledge about the topics in

expository texts, the variables the affected students' comprehension included the characteristics of texts themselves (concept load, structure, considerateness) and students' interest. Yet these variables seemed not to affect narrative text comprehension. The researchers asserted that their results are consistent with previous evidence related to structure; that narrative structure varies less and is more familiar to students than expository structure. On the other hand, other researchers such as Roller (1985) found that sixth graders did not have more difficulty understanding expository text when content was controlled. Langer (1986) found that an age factor was related to comprehension of text type. She found that as children grew older, they developed both a better sense of the differences between exposition and narration and changed the way they remembered them. However, by age 14, students were remembering more from expository text than from narrative text.

The most common reason put forth for narrative text being easier for children is that it is more directly connected to experience (Reder, 1980; Van Dijk, 1980). Rumelhart (1975) and Van Dijk (1980), for example, contend that the temporal unfolding of stories is easier than the conceptual nature of exposition because children have been brought up listening to stories. It is this familiarity with structure that makes this text type easier initially but as children progress through school, exposure to exposition accounts for the developmental changes observed by Langer (1986), for example. However, Spiro and Taylor (1987) do

not feel that structure is at the heart of the issue. They believe that children are brought up being exposed to expository structure. For example, exposition is used to answer children's questions about the world around them. But Spiro and Taylor suggest that once children begin school, exposition loses its personal relevance. Children begin to deal with content that is no longer relevant to their own questions and hence their experiences or interest, and as a result comprehension suffers. But the content of narration remains personally relevant since it deals with familiar human behavior and emotion.

We are thus not clear from the literature of the extent to which familiarity with text type and text content affects reader comprehension of, and reaction to, narration and exposition.

Nature and use of prior knowledge in the comprehension of narration

Sometime ago, Adams and Bruce (1982) wrote a seminal piece that has always stuck in my mind. Though now about 10 years old, the article is still very relevant to understanding the role of prior knowledge in narrative comprehension. To summarize some of their thinking is critical at this point. As an umbrella statement, Adams and Bruce (1982) maintain that most critical in comprehension "is the use of prior knowledge to create new knowledge" (p. 23). Thus, reading comprehension involves more than the construction of ideas out of preexisting concepts. It is using that knowledge. Adams and Bruce then specifically address prior knowledge and its use as it pertains to narrative text.

Adams and Bruce (1982) feel "it is misleading to speak of

language as a means of expressing one's thoughts. Language is, at best, a means of directing others to construct similar thoughts from their own prior knowledge" (pp. 2-3). Important components in the author-reader relationship make this communication possible. The author must decide what and how to communicate. Two major determinants come into play to determine the text's comprehensibility. They are the goodness of fit (a) between the knowledge the author presumes the reader to possess and the knowledge actually possessed by the reader, and (b) between the interpretative and inferential tendencies presumed of, and possessed by, the reader. If the author presents very little of the information critical to story comprehension, much is left for the reader to infer. Yet not everything presented in the story must be elaborated by the reader. Any text could lead to any variety and range of inferences but if the reader did that, the author's message would be lost completely. Rather the reader must decide when and what to infer. Adams and Bruce argue that the "concept of good structure" (p. 4) provides the needed system. It "governs what the author may omit from the text and what the reader must add" (p. 4). Thus, for a text to be an effective means of communication, the author and reader both must understand this concept and trust that the other does his/her part well. As opposed to a conversational exchange, in a reading context the author and readers do not share a spatial and temporal setting, and there is less opportunity for misunderstandings to be uncovered and corrected as there is an interactive face-to-face contact. As an

aside to this point, what Adams and Bruce (1982) have written is equally applicable to the comprehension of expository text. However, henceforth lie some difference. For narrative comprehension to occur, the reader and author must share and use three kinds of knowledge: conceptual knowledge, social knowledge, and story knowledge. It is this knowledge use that leads to successful communication in reading narratives. Let's now briefly examine each type of knowledge and the effect of its use on story comprehension as described by Adams and Bruce (1982).

Conceptual knowledge. The author must presume that the reader has sufficient knowledge on the topic or content itself. Otherwise the words from which text will be created will not "call up" concepts which are necessary for building a story. The problem for the author is primarily one of finding the right vocabulary but it is also a problem of the kind of elaborations (intensional [sic] and extensional) the reader will make on the vocabulary used. Therefore there are three types of mismatches (vocabulary, extensional and intensional elaborations) in the conceptual knowledge presumed of, and possessed by, the reader that contribute to breakdowns in comprehension.

Let's deal first with vocabulary. Because meanings of specific words are more informative than those of common words, authors tend to use the informative words. For example, Porsche is more informative than car. Such words can be a source of difficulty for the reader who lacks prior knowledge of them.

The second kind of mismatch that could occur between

conceptual knowledge presumed of, and possessed by, a reader is in the intensional meaning of a word. Intensional meaning consists of the total set of properties associated with a word, event, etc. But an author does not intend for all aspects of a word's intensional meaning to be used, only the relevant ones. The relevant ones need to be made clear to the reader from context. The meanings will only be clear then and only if the reader possesses the relevant aspects of the intensional meaning (i.e., it may not matter to comprehension if the reader knew that Calgary was a city in southern Alberta and that it is an oil capital but for a particular segment of a story to be understood it would make a difference to know that Calgary hosted the 1988 Olympics).

The extensional meaning of a term consists of all the objects or events to which it refers (anything seen, heard, to all experiences, etc.) because instances of these differ one from another. Comprehension is a problem then for the reader with limited or atypical experiences because inappropriate instantiations then usually occur. Such differences arise particularly when there are differences in cultural backgrounds of the author and the reader, or when the reader is young and has not developed relevant and varied prior knowledge.

According to Adams and Bruce (1982), much of the prior information needed when reading narrative text can be omitted by the author. This information, if available in the reader's prior knowledge, is supplied in the inferencing process and often encourages both an aesthetic stance and an enjoyment of the

literature. Too much information provided by the author leads to turgid, tedious reading. Alternatively this lack of information can make narrative text more difficult for some readers--for example, children reading about elephant hunting without much prior knowledge acquired through reading, TV documentaries or personal experience.

Social knowledge. According to Adams and Bruce (1982), the meaning of a linguistic message is only partly represented by its content; its full meaning depends on the purpose that the author/speaker had for producing the text. The imputation of intentions to a speaker or writer must be a key component of the reader's or listener's comprehension process. Meaning also depends on speaker's goals and beliefs in producing statements and on the reader realizing this fact, and correctly inferring what were the intentions and goals. Adams and Bruce (1982) use the example of the full meaning of a statement such as "I bought two egg salad sandwiches today" being dependent on whether it was the intention of the speaker to offer one of the sandwiches to the listener, turn down an invitation to lunch or shed light on the smell in the office. Otherwise there is confusion or a "so what" reaction. Thus there is an integral relationship between intention and meaning. Drawing on theories of social actions, McGee (1983), in fact, designed a study of the relationship between authors' intentions and comprehension. McGee found differences in perceptions of author intentions to be age-related. She speculated that different experiences as well as different expectations for

reading/listening at the different age levels contributed to the age-related differences. In support of the study's findings, McGee quotes Bruce's (1980) argument that "understanding the purpose of the story play[s] an important role in recognizing what higher level schemata to apply and hence in understand[ing] the story itself" (p. 380).

According to Adams and Bruce (1982), comprehending stories brings with it different dimensions of social complexities because to interpret stories the reader must consider not only the character's intention but also the impact of the utterance or action on other story characters. From then on, there is a complicated ripple effect from character to character. There develops a pattern of social interaction and tension resolution. Thus the reader's understanding and appreciation of a story depend upon the recognition of the social relations among its characters. The relationships amongst events and activities of a story can often only be understood in terms of the interacting beliefs, plans and goals of the characters. The author creates and relieves tensions amongst these to produce conflict, suspense, surprise and happy endings. But these aspects of story are not explicitly described by the text. They must be inferred by the reader. Thus, according to Adams and Bruce (1982), for adequate comprehension to take place, the reader must approach the text with well-developed knowledge or schema of the social situations on which the narrative is based. In these instances as well, the young or culturally different readers may experience difficulties because they lack

appropriate social schemata.

Another reason for failure to comprehend stories may not necessarily be the reader's lack of appropriate social knowledge, but a failure to draw inferences or to develop or apply the social knowledge in a way intended by the author. Adams and Bruce (1982) elaborate that authors use a variety of rhetorical devices to assist readers' comprehension by shaping the social structure of their stories. For example, authors may use such rhetorical devices as stereotyped characters (princesses, foxes), peripetia (a sudden/unexpected turn of events), and inconsistencies with real world knowledge.

Story knowledge. To understand a story, the reader must not only have prior knowledge of relevant words, real world concepts, and social interactions, but the reader must also draw on knowledge that applies to stories in general (Adams & Bruce, 1982). Such story knowledge includes the willing suspension of disbelief or the calling up of fantasy beliefs, central in the contract between the author and reader. As appropriate, the reader may replace real-world concepts and events with constructs based upon abstraction of real-world phenomena.

The reader must also be familiar with story-world conventions that the author uses and the devices by which these conventions are signalled. Three of the most important categories of rhetorical conventions are stereotypes, genre characteristics and story structure. These will be discussed briefly in turn.

In particular for characters in shorter stories (where

character development is not easily possible) and for lesser characters, the author uses stereotypes or "stock" characters. In this way, the author relays the character's essence. Comprehension is affected if the reader lacks knowledge of stereotypes or if the reader generates an incomplete image for the character in question.

Readers also invoke a set of expectations for genre and bring to the reading this prior knowledge of genre. These expectations include purpose of the author and the relationships between the form (structure) and the content of text. Readers bring expectations of how the content should be organized--and each type of text calls forth certain expectations and suggests specific strategies to be applied when reading. Stories in turn have certain structural characteristics; characteristics or conventions of the culture in which the stories were written. Seminal work on story grammars (Gordon & Pearson, 1983; Mandler & Johnson, 1977; Rumelhart, 1975; Stein & Glenn, 1979; and Thorndyke, 1977) has shown that readers, when reading, acquire and use a concept of good story structure.

It appears then, from the nature of the genre itself, that the type of prior knowledge (even the nature of conceptual knowledge) required for comprehending narrative would differ from the kind required for understanding exposition. The analysis and discussion by Adams and Bruce (1982) described above suggests that comprehension is affected when the reader lacks certain prior knowledge. It is also affected when the reader selects the wrong knowledge to apply. Even when the reader chooses appropriately

from conceptual knowledge, social knowledge and story knowledge, the reader may place too much reliance on one aspect of that knowledge or another. The good structure heuristic (the social interaction between author and reader depends on shared knowledge, a critical component of which is that the reader is looking for good structure) is necessary for understanding all texts.

More recently, McCormick, Waller and Flower (1987) write that readers bring to any reading of literature a repertoire of knowledge about literature and a whole belief system. They write that all readers bring "a complex (and perhaps never fully analyzable) set of expectations, desires, prejudices and former experiences (both literary and non-literary), which we are calling their repertoire" (p. 14). In addition, underlying our own interpretations of text always are social, cultural and literary values and assumptions. It seems then that because a wider band of interpretation (Tierney, LaZansky, Raphael and Cohen, 1983) is permissible for narrative text, the amount and type of prior knowledge can possibly be more varied and yet still enable adequate understanding of narratives. Because each reader brings to a text different prior knowledge or a different set of experiences, beliefs, expectations and knowledge, interpretations are somewhat different, and are "allowed", whereas they are not necessarily allowed in the reading of exposition.

Readers also have literary repertoires, according to McCormick, Waller and Flower (1987), or assumptions and knowledge about what literature "is" or "should be" based on their previous

reading. For example, most readers assume that a story will follow certain conventions--clear characterization, conflict, a good plot and eventually a resolution. So they conclude that not withstanding nuances, expectations it has been generally agreed that narrative text is still easier to understand because of prior knowledge or familiarity with the literary genre, particularly with narrative form.

Nature and use of prior knowledge in the comprehension of exposition

As stated above, familiarity with, and experiences in, the content of narratives from an early age is said to enhance comprehension. Stories center on experiences/topics that are more familiar to us and less abstract than many of the concepts in expository text. Thus reading expository text makes demands on prior knowledge that the reader may not possess. Expository text introduces new information in a new way, yet students may tend to read exposition in the same way as narrative material. In addition, one of the characteristics of expository text is that it tends to be less considerate (Armbruster & Anderson, 1981) than narrative text. Considerateness includes (a) a systematic arrangement of ideas in a pattern compatible with a particular discipline, (b) logically connected ideas, and (c) a recognition of the reader's probable prior knowledge on the topic.

One source of difficulty in reading expository text (i.e., content reading materials) is conceptual knowledge. Many of the concepts that appear in any one text are abstract rather than

concrete. The more abstract the concept, the more difficult it is to understand. Expository materials tend to contain a large number of unfamiliar, abstract concepts which are often developed in a pyramid fashion. Most students lack prior experience with these concepts. Much of the knowledge about the content of science or social studies is not part of students' everyday experiences (as is knowledge acquired as background information for the reading of narratives). Yet students in content areas are expected to comprehend and remember key concepts that eventually serve as the basis for later learning. But it is often <u>through</u> reading expository text that they begin to build their background knowledge or schemata in a subject rather than, as in reading narrative text, anchoring new information that they learn from reading into existing schemata acquired through previous experiences.

At times, students acquire the vocabulary of a discipline (or at least some of it) without having any real understanding of the underlying concepts. Additionally, expository materials may contain extensive, specialized vocabulary of the content fields and readers face a comprehension problem whenever they lack familiarity with the basic concepts in a text (Roller-Wilson, 1983). Alternately, content materials may use what appear to be common words in new ways or in new and technical contexts.

In addition, expository writing style is very compact. Large numbers of ideas and basic concepts relevant to a discipline are compressed into each line of text. Regardless of the amount of prior knowledge a reader possesses, the number of concepts that

impinge on the reader within any reading time frame is a complicating factor as far as accessing and engaging prior knowledge. Content schemata or prior knowledge if available to the reader helps a reader make sense of written content by providing an informational context. Prior knowledge of the content helps readers anticipate author's ideas and provides a cognitive framework into which to anchor the new ideas. Roe, Stoodt & Burns (1987) write that by developing and using content schemata (prior knowledge), readers can organize, understand and remember content.

Finley (1991) addresses prior knowledge specifically when reading schence, although his statement can be generalized to other content areas. He states

> Learning from text is slikely to be successful when a student's knowledge of a topic is consistent with the information presented in the text, is fairly extensive, and is correct but not necessarily complete (Finley, 1990). Three factors involving prior knowledge can hamper learning from text. The most obvious is students' lack of knowledge about a topic. The second is students' incorrect prior knowledge or misconceptions about a topic. The third has to do with the variability of students' knowledge. (pp. 23-24)

As well, expository materials have standard structures for expressing and organizing information. Yet few children are aware of expository text structure (Englert & Heibert, 1984; Richgels, McGee, Lomax & Sheard, 1987). Berkowitz and Taylor (1981) found that the text-specific structure was not as readily discernible by

students and thus not used as a memory framework as was the stereotypic temporal structure of narratives.

Since knowledge of expository structure plays an important role in comprehension of informational selections, these structures have to be taught to children (Gordon, 1990). Yet even young children appear to have some awareness of narrative structures and to use this awareness as an aid to comprehension of stories (Mandler & Johnson, 1977; Stein & Glenn, 1979; Gordon, 1988). Though expository texts contain certain structures, these appear not to be as predictable as is narrative structure. The basic assumption is that the more predictable the structure of text is, the better are the chances of a student locking into it and using it. Although internal structures such as cause and effect, temporal order, enumeration, comparison and contrast, and problem/solution are present, they are not used consistently, they are used badly, or a number of them can be present within any one section or chapter. Thus a knowledge of the structural characteristics of expository text appears not to be as facilitative of comprehension (to predict, follow and organize information) as does a knowledge of narrative text structure. But here again this is a conclusion drawn from separate research on narrative and expository structure; it is not necessarily a conclusion based on research wherein narrative and expository text structure concerns were the focus of the same study. It seems accepted generally that students typically seem to experience a greater degree of difficulty using their knowledge of content and

structure schemata when reading expository text than when reading narrative text. For example, in mathematics, knowledge of mathematical concepts, knowledge of reading formulae and specialized symbols, coping with specialized vocabulary and the explanation pattern (which is typical to the discipline), and coping with the syntactic/semantic organization of written problems can be highly challenging to the reader's comprehension. In general then, even considerate expository texts are considered to be more difficult to understand than narrative texts.

Prior misconceptions and text types

If the role of correct and fairly well-developed prior knowledge in understanding narrative as opposed to understanding expository text is not clearly understood, the problem is compounded even more when the prior knowledge acquired is in the form of a misconception. While there is little work on misconceptions and the reading of narrative text, recently there has been research on misconceptions in science education (Anderson & Smith, 1987; Champagne, Gunstone & Klopfer, 1985; Easley, 1982; Howe & Durr, 1982; Nussbaum & Novick, 1982; Posner, 1991; Posner, Strike, Hewson & Gertzog, 1982; Roth, 1985) and in reading education (Alvermann, Smith & Readence, 1985; Alvermann & Hynd, 1989; Dole & Smith, 1989; Guzzetti & Taylor, 1988; Marshall, 1989; Swafford, 1989). In particular, the effects of intuitive understandings (naive conceptions, misconceptions) have been studied on the comprehension of expository material, text that is consistent with scientific thinking. Several of these researchers

have focused on the role of text types in contributing to conceptual change (Alvermann & Hynd, 1989; Gordon & Rennie, 1987; Maria & Johnson, 1990; Marshall, 1990).

As early as 1986, Lipson had suggested that elementary students may be more willing to give up their misconceptions when they read story-like material than when they read textbook material because of their prior knowledge about stories, more specifically because of "their understanding that anything can happen in stories" (p. 8). In one of the first studies to use two different text types to alter students' misconceptions, Gordon and Rennie (1986, 1987) offered a different explanation. Following an instructional treatment where both narrative and expository text had been used in an effort to alter students' misconceptions (i.e., to restructure content schemata), they speculated that a confounding factor may have been the use of narrative text. That is, students may have seen the text as a story (falling in the realm of "less than believable") and thus not altered their misconceptions when then they were presented with counter-intuitive information in an expository test selection. Gordon and Rennie (1986, 1987) found that the narrative text (a legend or myth) posed a problem for students in terms of trustworthiness. First many children questioned whether the text contained any true account and second, they less frequently used the narrative as a source for making their inferences in the responses they made on a structured interview. The researchers concluded that the same information presented in narrative and expository formats may not be judged

equally valid by readers for content area learning. One of the interesting spin-offs from this study is the kind of research on conceptual change now being conducted with the two text types. The more recent research has continued to produce conflicting findings with respect to the role of text types in altering students prior knowledge of misconceptions.

Alvermann & Hynd (1989) designed a study on the role of text in promoting conceptual change. They used ninth grade students to (a) investigate the influence of researcher- and peer-mediated discussion on high school students' ability to change their incomplete or incorrect intuitive understandings about projective motion to make them more consistent with the scientific explanations given in their texts, and (b) explore the possibility that counter-intuitive science concepts embedded in a narrative text structure would be acquired more easily than the same concepts embedded in an expository text structure. They based their thinking on the following opinions and findings. First, Lipson (1986) had suggested that elementary students may be more willing to give up their misconceptions when they read story-like material than when they read textbook material. Second, soft exposition (Valencia & Stallman, 1989), or a hybrid of narrative-expository text, has been used by some science textbook writers in the belief that difficult concepts could best be taught through a familiar narrative-like text structure. Third, Maria (1988) had hypothesized that when soft exposition is used to represent counter-intuitive science concepts in real-life situations,

students may have fewer problems overcoming their tendency to separate real world knowledge from knowledge acquired through textbooks. Fourth, Valencia, Stallman, Commeyras & Greer (1987) found differences in ideas that were elicited on narrative and expository topics in their validation study involving three methods of accessing prior knowledge.

With respect to effectiveness of treatments to change misconceptions, Alvermann and Hynd (1989) found their results difficult to interpret in that on only one task (the application task) of the three measures used (True/False posttest, short answer test and application task) did the students in the researcher- and peer-mediated discussion group outperform the question/answer or control conditions.

However, one consistent finding in the Alvermann and Hynd (1989) study was the superiority of the expository text, compared to narrative text, in effecting conceptual change among high school students. They found no evidence to support the use of story-like structures in presenting information about counter-intuitive science concepts. They speculated that by ninth grade, students had learned to read expository structure and held certain expectations of learning/testing from expository text and no longer required concepts to be embedded in narrative text structure. Alvermann and Hynd speculate that the reasons for the superiority of the expository text may be due to the fact that ninth grade students have had enough time to adjust to learning from this type of text and high school students expect the testing of stories to

be different than the testing of exposition. They suggest that further studies dealing with conceptual change and different text types are needed in which students' thinking is explored and clarified through talk-alouds.

Maria and Johnson (1990) conducted research with the aim of investigating whether presenting scientific information (in this case, information on seasonal change) in narrative (refutation) text would promote more effective conceptual change than presenting it in an expository text (also a refutation text). Maria and Johnson (1990) found students obtained consistently better scores if elementary school students read considerate soft expository text. Soft expository text was defined by them as a narrative whose primary purpose is to present content which refutes a particular misconception. These were hybrid texts (a cross between narrative and expository). The researchers based their thinking on the logic of Freedle and Hale (1979) who suggested that a schema for expository prose might be formed by transferring students' already existing narrative schema to expository text. A soft expository text structure it was speculated would be even more facilitative in the transfer because it contains structural elements from both text types. Maria and Johnson (1990) also considered interest a factor in the soft exposition texts they used. Hidi and Baird (1988), for example, had used narrative anecdotes inserted into exposition to increase children's interest but they found that the narrative information proved to be a distracter from the important content information. Yet, soft

expository text, hypothesized Maria and Johnson (1990), might counter that type of separation of narration and exposition. In addition, soft expository text might overcome a difficulty inherent in expository text--the decontextualized and impersonal way in which science information is presented even in considerate refutation text which often fosters a separation of scientific knowledge and personal experiences children have had that support misconceptions.

Seventh and fifth grade students were used in the Maria and Johnson (1990) study as were three text types: considerate expository text, inconsiderate expository text, and considerate soft expository text. Each type was used with a different group. Three tests were administered: a multiple choice prior knowledge test as a pretest; a multiple choice misconception test given as a pretest, immediate and delayed posttest; and an immediate and delayed application test. Maria and Johnson (1990) found that the students learned the scientific explanation of seasonal change better with the considerate soft expository text than with the inconsiderate expository test. However, the results showed better learning with the considerate soft expository text than with the considerate expository test, but these were observed only on the delayed application test. Maria and Johnson speculate that the considerate soft expository text may make the information more memorable but state that further research is needed. They question, however, whether considerate soft expository text would be helpful in inducing conceptual change in older children and

adults. The Alvermann and Hynd (1989) study cited earlier had demonstrated that with older students expository text was more effective in conceptual change. Marshall (1990), on the other hand, using preservice teachers as subjects concluded that neither form of expository text (one containing an explicit treatment of the difficulties met when holding a misconception) nor the narrative text were significantly more effective than the others in inducing conceptual change. She found that regardless of treatment all subjects added new information and revealed some decrease in misconception.

Hynd and Chase (1987) also studied expository and narrative text together. They examined the relationships among text type (expository, narrative or descriptive), tone (personal or impersonal), and readers' responses (reader-based or text-based). According to Crismore (1981), tone of a text can influence what readers comprehend and read from text. There is no one definition of tone. Tone has often been described interchangeably with style, mood, voice and attitude. It can be thought of "as being an aspect of text that signifies the relation between the author and the reader, and the author and the content" (Hynd & Chase, 1987, p. 12). Hynd and Chase found that the subjects did think expository text was more difficult although they described some commonalities when discussing their processing of the three discourse types. With regard to readers' reactions/responses, no differences were found across text types except with descriptive text where there were fewer text-based and more reader-based comments. Tone did not

figure significantly in response across text nor were there any significant interactions with text type. Hynd and Chase speculated that discourse type (as contended by Brewer) may interact with discourse force (whether a selection is used to persuade, inform, entertain or simply provide pleasure) and if it is kept constant, then expository and narrative passages may be seen to be equal in difficulty. As well, processing differences often attributed to text type may be due to differences in content. Roller (1985) had previously suggested that expository and narrative texts are comprehended equally well when content is controlled. Thus as long as content and familiarity are similar, the nature of text (whether narrative or expository) had little to do with readers' reactions to it. However, differences such as tone, content, levels of familiarity, discourse forces, and styles may account for differences in the comprehension of the two genre.

According to Hynd and Chase (1987) and Crismore (1981), tone makes a difference on comprehension. In the Hynd and Chase study, students in their study who read passages with an impersonal tone did better than students who read passages with a personal tone. They suggested that is possible that readers familiar with the task of reading informational materials look for factors such as objective impersonal tone (rather than focusing on text type) to trigger comprehension and recall. It would seem then that two areas of continued research should be (a) the role of prior knowledge and other factors that affect processing across different text types and (b) personal involvement (personal reactions that

are triggered) in comprehension.

Some Final Thoughts

While schema theory has tended to present a very cognitive view of reading and of prior knowledge, Rosenblatt's (1978, 1985) transactive theory of reader response presents a more affective view of reading and prior knowledge. Prior knowledge in Rosenblatt's view is much more influenced by affect just as described earlier by Pace et al. (1989). Along this vein, Mosenthal (1987) argues that structure-based explanations (story grammar perspectives) for example have not taken into account readers' affective responses to narrative text. Although the involvement of prior knowledge and the affective response of any reader during story reading may be idiosyncratic, there is still a positive relationship between affective response and comprehension. In addition, he states, when prior knowledge is accessed, the inferences made are "felt" inferences. Thus, according to Mosenthal, prior knowledge allows not just conceptual entry, but also emotional entry, into the schemata that are instantiated. Certain concepts in stories develop feelings and associations that are not accounted for by structure-based explanations. Despite Mosenthal's contentions, Sadoski (1984) found no support for the hypothesis that reader affect and reader imagery significantly predict recall. Yet reader knowledge of story structure significantly predicted recall.

Rosenblatt describes two stances readers can take when reading. The efferent stance is a focus on information to be

retained after reading while the aesthetic stance occurs when the reader's attention is on the lived-through experience, on the thoughts, feelings, associations and elaborations evoked as the text is read. What effect does stance have on comprehension? What is the relationship between stance and prior knowledge? Cox and Many (1989) and Many (1990, 1991) found first that a student's written response to literature can reflect a discernible stance, ranging on a continuum from efferent to aesthetic. They also found the aesthetic stance was related to higher levels of personal understanding of stories. More research needs to be conducted on stances readers take when reading literary works (narrative and expository texts), the effect of stance on comprehension, and the relationship of stance to prior knowledge.

The issue of interest and motivation also affects how and if prior knowledge is accessed when reading narrative and expository texts. While it has been generally believed that narratives may be inherently more interesting than expository text (at least to some readers) and thus easier to comprehend, the interest-prior knowledge-comprehension relationship in narrative and expository texts is not clear. Weber (1979) concluded that prior knowledge was the stronger factor, although interest and prior knowledge contribute jointly to enhancing comprehension. Using expository texts, and controlling for prior knowledge, Osako and Anders (1983) found that topic interest was not a strong predictor of how well students would understand texts read. They suggest that the effect of interest on comprehension is topic specific. In addition, task

orientation of subjects (as in school tasks and tests) requires them to suppress their personal interest in order to understand texts with which they are presented. The relationship between affect, interest, prior knowledge, and comprehension, however, remains unclear.

A Summary of Directions for Future Research

Based on the foregoing examination of the issues in prior knowledge as it relates to narrative and expository text, a summary of specific research questions is presented. Although various research needs were highlighted throughout the chapter, these are listed again below. Studies designed to answer these questions will require the use of think alouds and other introspective and retrospective measures.

1. What is embodied by the term prior knowledge and what specifically is the difference in the aspects of prior knowledge required to comprehend narrative and expository text? In other words, what is the nature and complexity of prior knowledge as it relates to narration and exposition?
2. How do variables in texts themselves interact with prior knowledge to make narratives or expositions easy or difficult to comprehend?
3. What is the effect of such components of prior knowledge as different attitudes, beliefs, social affiliations and communication conventions on comprehension of narrative and expository text?
4. What is the relative importance in comprehension of exposition

and narration of such facets of prior knowledge as knowledge of topic, knowledge of structure, affect, etc...?

5. What is the role of prior knowledge in relationship to top-down processing concerns such as schema selection, activation, maintenance and utilization?
6. What are the differences in processing demands across the two genres?
7. What is the role of narrative and expository text in promoting conceptual change? What are the factors that contribute to discrepant findings with respect to text types and conceptual change?
8. What is the role of personal involvement (e.g. "felt" inferences) as a component of prior knowledge in the comprehension on narrative and expository text? That is, in a more affective view, rather than a cognitive view, of reading what is prior knowledge and what is its role in narrative and expository text comprehension?

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